Mock Test Paper - Series II: August, 2025

Date of Paper: 7th August, 2025

Time of Paper: 10 A.M. to 1 P.M.

INTERMEDIATE: GROUP - II

PAPER - 4: COST AND MANAGEMENT ACCOUNTING

PART I - Case Scenario based MCQs (30 Marks)

ANSWERS

1. **(a) ₹ 2,16,90,000**
2. **(a) ₹ 2,29,50,000**
3. **(c) ₹ 2,54,20,000**
4. **(b) ₹ 2,58,60,000**
5. **(b) ₹ 16,85,000**

Working Note:

Sl. No.	Particulars	Amount (₹)	Amount (₹)
(i)	Material Consumed:		
	- Raw materials purchased	96,50,000	
	- Carriage inward	2,15,000	
	Add: Opening stock of raw materials	7,10,000	
	Less: Closing stock of raw materials	(5,40,000)	1,00,35,000
(ii)	Direct employee (labour) cost:		
	- Direct wages	72,80,000	
	- Employer's Contribution towards PF & ESIS	8,00,000	80,80,000
(iii)	Direct expenses:		
	- Consumable materials	5,25,000	
	- Electricity & fuel	30,50,000	35,75,000
	Prime Cost		2,16,90,000

(iv)	Works/ Factory overheads:		
	- Wages to floor supervisors and store assistants	9,60,000	
	- Other indirect wages to factory staffs	1,75,000	11,35,000
	Gross factory cost		2,28,25,000
	Add: Opening value of W-I-P		8,50,000
	Less: Closing value of W-I-P		(7,25,000)
	Factory Cost		2,29,50,000
(v)	Research & development cost paid for improvement in production process		11,20,000
(vi)	Production planning office expenses		13,50,000
	Cost of Production		2,54,20,000
	Add: Opening stock of finished goods		16,20,000
	Less: Closing stock of finished goods		(11,80,000)
	Cost of Goods Sold		2,58,60,000
(vii)	Administrative overheads:		
	- Salary to accountants	8,50,000	
	- Fees to statutory auditor	2,20,000	
	- Fees to cost auditor	95,000	
	- Fee paid to independent directors	10,50,000	22,15,000
(viii)	Selling overheads & Distribution overheads:		
	- Salary to delivery staffs		15,20,000
	Cost of Sales		2,95,95,000
	Profit (balancing figure)		16,85,000
	Sales		3,12,80,000

Note: Income tax for AY 2024-25, Penalty paid for the late payment of interest and Contribution to disaster relief fund are avoided in cost sheet.

6. (a) ACs – ₹ 9,276.00, WMs – ₹ 6,212.50, RFs – ₹ 7,523.75

Statement Showing "Cost *per unit* - Activity Based Costing"

Product	ACs (₹)	WMs (₹)	RFs (₹)
Material	7,500	5,000	6,000
Labour Hours	6	4	5

Labour Rate/hr	250	250	250
Labour	1,500	1,000	1,250
Overhead (W.N.)	276.00	212.50	273.75
Total Cost	9,276.00	6,212.50	7,523.75

Working Notes

Cost for each activity cost driver:

Activity	Total Cost (₹)	No. of Activity Driver	Activity Rate
Machine Setups	₹ 9,00,000	180 setups	₹ 5,000/setup
Quality Inspections	₹ 6,00,000	300 inspections	₹ 2,000/inspection
Material Handling	₹ 7,50,000	500 moves	₹ 1,500/move
Utilities & Maint.	₹ 15,00,000	30,000 hrs	₹ 50/machine hour

Overhead Cost per Unit

Product	ACs (₹)	WMs (₹)	RFs (₹)
Setups	60 x 5,000 = 3,00,000	70 x 5,000 = 3,50,000	50 x 5,000 = 2,50,000
Inspections	90 x 2,000 = 1,80,000	100 x 2,000 2,00,000	110 x 2,000 = 2,20,000
Material Handling	200 x 1,500 = 3,00,000	150 x 1,500 = 2,25,000	150 x 1,500 = 2,25,000
Utilities & Maintenance	12,000 x 50 = 6,00,000	10,000 x 50 = 5,00,000	8,000 x 50 = 400,000
Total Overhead	13,80,000	12,75,000	10,95,000
Units Produced	5,000	6,000	4,000
Overhead per Unit	276.00	212.50	273.75

7. (b) **Profit/unit: ACs – ₹ 8,724.00, WMs – ₹ 7,787.50, RFs – ₹ 8,476.25;**

Total Profit: ACs – ₹ 4,36,20,000, WMs – ₹ 4,67,25,000, RFs – ₹ 3,39,05,000

Calculation of Profit per Unit and Total Profit

Product	ACs (₹)	WMs (₹)	RFs (₹)
Selling Price	18,000.0	14,000.0	16,000.0
Cost	9,276.0	6,212.5	7,523.75

Profit per Unit	8,724.0	7,787.5	8,476.25
Units Sold	5,000	6,000	4,000
Total Profit	4,36,20,000	4,67,25,000	3,39,05,000

8. (c) Labour Efficiency Variance: ₹ 8,75,000 (Adverse), Labour Rate Variance: ₹ 0

Standard Labour Cost

Product	ACs	WMs	RFs
Standard Hours per unit	5.5 hrs	3.5 hrs	5.5 hrs
Rate (₹)	250	250	250
Units	5,000	6,000	4,000
Total Std Hours	27,500	21,000	22,000

Total Actual Labour Cost

Product	ACs	WMs	RFs
Actual Hours per unit	6 hrs	4 hrs	5 hrs
Units	5,000	6,000	4,000
Actual Hours	30,000	24,000	20,000

Labour Efficiency Variance

= (Standard Hours – Actual Hours) × Standard Rate

ACs = (27,500 – 30,000) × 250 = ₹ 6,25,000 (A)

WMs = (21,000 – 24,000) × 250 = ₹ 7,50,000 (A)

RFs = (22,000 – 20,000) × 250 = ₹ 5,00,000 (F)

Total Labour Efficiency Variance = ₹ 8,75,000 (A)

Labour Rate Variance

= (Standard Rate – Actual Rate) × Actual Hours

Standard and Actual Rate = ₹ 250

Labour Rate Variance = ₹ 0

9. (b) Yes, because accepting the full order causes a net profit of ₹ 5,03,750

The incremental costs associated with the order must be considered to decide whether to accept it.

- Offered Price per WM: ₹ 12,000
- Direct Material Cost per WM: ₹ 5,000

- Direct Labour Cost per WM: ₹ 1,000
- Additional Packaging Cost per WM: ₹ 150

Because the company has idle capacity of 200 WMs, and only 50% of the overheads are variable, the remaining 50% are fixed and will not be impacted by the special order. The variable portion of the overheads for WMs is: ₹ 212.50 x 0.50 = ₹ 106.25 per unit.

- Incremental Cost per WM: 5,000 + 1,000 + 150 + 106.25 = ₹ 6,256.25
- Incremental Profit per WM: ₹ 12,000 - ₹ 6,256.25 = ₹ 5,743.75

The order requires 500 WMs, but the company only has idle capacity for 200. It must be accepted fully, implying that the company would need to reduce regular production by 300 units to fulfill the remaining 300 units of the order. SunBright would lose out on the profit of these 300 units if they accept the order.

- Profit on 200 units (idle capacity): 200 x ₹ 5,743.75 = ₹ 11,48,750
- Opportunity cost on 300 units (diverted from regular production):

= 300 x {(14,000-12,000) + 150}

= ₹ 6,45,000

Net profit on accepting the order = ₹ 5,03,750

Accepting the entire order would result in a net profit of ₹ 5,03,750. Therefore, the company should accept the foreign order.

10. (d) ₹ 50,000 (Adverse)

Total Actual Overheads = ₹ 9,00,000 + ₹ 6,00,000 + ₹ 7,50,000 + ₹ 15,00,000

= ₹ 37,50,000

Budgeted Overheads = ₹ 37,00,000

Overhead Variance = Actual Overheads - Budgeted Overheads

= ₹ 37,50,000 - ₹ 37,00,000 = ₹ 50,000 (Adverse)

11. (d) ₹ 6,000

Relevant Cost :

- Opportunity Cost of machine = ₹ 18,000 – ₹ 15,000

= ₹ 3,000

- Additional Maintenance:

  Incremental maintenance = ₹ 200/month

  Duration = 3 months

  Total additional maintenance cost = ₹ 200 x 3 = ₹ 600
- Operator Cost = ₹ 800/month x 3 months = ₹ 2,400

  Total Relevant Cost = ₹ 3,000 + ₹ 600 + ₹ 2,400 = ₹ 6,000

12. (c) 2,80,000 units

Raw material required for production (including 5% wastage)

= 50,000 units x 5 = 2,50,000 units

Raw material to be purchased

= Required for production + Desired closing stock − Opening stock

= 2,50,000 + 1,20,000− 90,000 = 2,80,000 units

13. (c) 10,000 units

1. Completion of Opening WIP

   = 3,000 units x (100% − 60%)

   = 3,000 x 40%

   = 1200 units
2. Units started and completed during the period

   These are new units that were completed in the period (excluding the opening WIP):

   = 6,000 units
3. Equivalent units in Closing WIP

   = 4,000 units x 70%

   = 2,800 units

   Total Equivalent Units (FIFO)

   = Completion of Opening WIP + Units started & completed + Closing WIP

   = 1,200 + 6,000 + 2,800

   = 10,000 units

14. (c) Job A - ₹ 780, Job B - ₹ 720, Job C- 900 and wages paid for Abnormal idle time - ₹ 240 to be charged to Costing Profit & Loss A/c.

Working notes:

(i) Total effective hours in a week:

[(8 hrs. – (25 minutes + 15 minutes)] × 6 days = 44 hours

(ii) Total wages for a week:

(₹ 200 + 120% of ₹ 200) × 6 days = ₹ 2,640

(iii) Wage rate per hour = $\left(\frac{₹\ 2,640}{44\ \text{Hours}}\right)$ = ₹ 60

(iv) Time wasted waiting for job (Abnormal idle time):

= 44 hrs. – (13 hrs. + 12 hrs. + 15 hrs.) = 4 hrs.

Allocation of wages		**(₹)**
Job A	13 hours × ₹ 60	780
Job B	12 hours × ₹ 60	720
Job C	15 hours × ₹ 60	900
Charged to Costing Profit & Loss A/c	4 hours × ₹ 60	240
Total		2,640

15. (b) 922

Cash sales in May: 40% of ₹ 10,00,000 = ₹ 4,00,000

Credit sales from April realized in May: 80% of (60% of ₹ 9,00,000)

= 0.8 × 0.6 × ₹ 9,00,000 = ₹ 4,32,000

Credit sales from March realized in May: 20% of (60% of ₹750,000)

= 0.2 × 0.6 × ₹ 7,50,000 = ₹ 90,000

Total cash receipts for May = ₹ 4,00,000 + ₹ 4,32,000 + ₹ 90,000

= ₹ 9,22,000

PART-II Descriptive Questions (70 Marks)

1. (a) (i) Contribution per unit = Selling price – Variable cost

= ₹ 100 – ₹ 60

= ₹ 40

Break-even Point = $\frac{₹\ 24,00,000}{₹\ 40}$

= 60,000 units

Percentage Margin of Safety = $\frac{\text{Actual Sales} - \text{Break-even Sales}}{\text{Actual Sales}}$

Or, 60% = $\frac{\text{Actual Sales} - 60,000\ units}{\text{Actual Sales}}$

∴ Actual Sales = 1,50,000 units

	(₹)
Sales Value (1,50,000 units × ₹ 100)	1,50,00,000
Less: Variable Cost (1,50,000 units ×₹ 60)	90,00,000
Contribution	60,00,000
Less: Fixed Cost	24,00,000
Profit	36,00,000
Less: Income Tax @ 40%	14,40,000
Net Return	21,60,000

Rate of Net Return on Sales = 14.40% $\left(\frac{₹\ 21,60,000}{₹\ 1,50,00,000} \times 100\right)$

(ii) Products

	X (₹)	Y (₹)
Selling Price *per unit*	100	150
Variable Cost *per unit*	60	100
Contribution *per unit*	40	50

Composite contribution will be as follows:

Contribution per unit = $\left(\frac{40}{8} \times 5\right) + \left(\frac{50}{8} \times 3\right)$

= 25 + 18.75 = ₹ 43.75

Break-even Sale = 64,000 units $\left(\frac{₹\ 28,00,000}{₹\ 43.75}\right)$

Break-even Sales Mix:

X (64,000 units × 5/8)	=	40,000 units
Y (64,000 units × 3/8)	=	24,000 units

(b) Working Notes:

1. Total available hours per week (normal)

   = 50 workers x 40 hours = 2,000 hours

2. Total standard hours required to produce 17,500 units at 5 units/hr

   = 17,500/5 = 3,500 hours

3. Total hours needed after bonus scheme at 7 units/hr

   = 17,500 ÷ 7 = 2,500 hours

4. Time saved = 3,500 – 2,500 = 1,000 hours

5. Wage rate per hour = ₹ 500 ÷ 40 = ₹ 12.50/hour

6. Overtime limit = 10 hours/worker/week ⟶ max overtime = 50 x 10 = 500 hours

7. **Bonus**:

   (i) Halsey Scheme $= \frac{1}{2}$ x Time saved x Wage rate per hour

   $= \frac{1}{2}$ x 1,000 x ₹ 12.50 = ₹6,250

   (ii) Rowan Scheme $= \frac{\text{Time saved}}{\text{Time allowed}}$ x Time taken x Wage rate per hour

   $= \frac{1,000\ \text{hours}}{3,500\ \text{hours}}$ x 2,500 hours x ₹ 12.50 = ₹ 8,929

8. **Overtime premium (only in present system)**:

   - Overtime hours = 3,500 – 2,000 = 1,500 hrs
   - Limited to 500 hrs (as only 10 hrs per worker allowed), rest must be absorbed or not worked

→ Overtime premium = 500 hrs x ₹ 6.25 (half rate) = ₹ 3,125

Statement Showing the Weekly Profit Under Present, Halsey, and Rowan Schemes

Particulars	Present (₹)	Halsey (₹)	Rowan (₹)
Sales Revenue (17,500 x ₹15)	2,62,500	2,62,500	2,62,500
***Less:* Costs**			
- Direct Material (17,500 x ₹ 10)	1,75,000	1,75,000	1,75,000
- Direct Wages	43,750 (3,500 x ₹ 12.50)	31,250 (2,500 x ₹ 12.50)	31,250 (2,500 x ₹ 12.50)
- Overtime Premium (500 x ₹ 6.25)	3,125	–	–
- Bonus	–	6,250	8,929
- Variable Overheads	2,100 (3,500 x ₹ 0.60)	1,500 (2,500 x ₹ 0.60)	1,500 (2,500 x ₹ 0.60)
- Fixed Overheads	12,000	12,000	12,000
Total Cost (B)	**2,35,975**	**2,26,000**	**2,28,679**
Profit (A – B)	**26,525**	**36,500**	**33,821**

(c) Workings:

Calculation of budgeted hours

Budgeted hours = (52 x 25 x 8) x 85% = 8,840 hours

(i) Variable overheads variance

(a) Variable overhead expenditure variance

= Std. overhead for Actual hours – Actual variable Overhead

$$= \left(\frac{₹\,1,06,080}{8,840} \times 8,100\right) - ₹\,1,02,000$$

= **4800 A**

(b) Variable overhead efficiency variance

Std. rate per hour × (Std. hours for actual production – Actual hours)

$$= \frac{₹\,1,06,080}{8,840} \text{ (8,800 hours – 8,100 hours)}$$

= 8400 F

(ii) Fixed overhead variances

(a) Fixed overhead capacity variance

= Std rate x (Actual hours – budgeted hours)

$= \frac{₹\ 2,21,000}{8,840}$ x (8,100 – 8,840)

= 18,500 A

(b) Fixed overhead efficiency variance

= Std rate x (Std hours for actual production – Actual hours)

$= \frac{₹\ 2,21,000}{8,840}$ x (8,800 – 8,100)

= **17,500 F**

2. (a) (i) Direct method of apportioning the costs of support departments over the operating departments.

Items of cost	Basis of apportionment	Total (₹)	Operating Departments	
			MD (₹)	DS (₹)
Fixed overhead costs:				
Finance	4,500 : 2,250	22,96,800	15,31,200	7,65,600
IT	67,500 : 75,000	30,30,500	14,35,500	15,95,000
Total fixed overhead costs apportioned (A)		53,27,300	29,66,700	23,60,600
Variable overhead costs:				
Finance	1,200 : 3,600	12,76,000	3,19,000	9,57,000
IT	79,800 : 34,200	38,28,000	26,79,600	11,48,400
Total variable overhead costs apportioned (B)		51,04,000	29,98,600	21,05,400
Total overhead costs (A + B)		1,04,31,300	59,65,300	44,66,000

(ii) Step-down method of apportioning the costs of support departments over the operating departments (apportioning the finance department costs first)

Items of cost	Basis of apportionment	Total (₹)	Support Departments		Operating Departments	
			Finance (₹)	IT (₹)	MD (₹)	DS (₹)
Fixed overhead costs		53,27,300	22,96,800	30,30,500		
Distribution of Finance Department	750:4,500:2,250	--	(22,96,800)	2,29,680	13,78,080	6,89,040
		53,27,300	--	32,60,180	13,78,080	6,89,040
Distribution of IT Department	67,500: 75,000	--	--	(32,60,180)	15,44,296	17,15,884
Total fixed overhead costs apportioned (A)		53,27,300	--	--	29,22,376	24,04,924
Variable overhead costs		51,04,000	12,76,000	38,28,000		
Distribution of Finance Department	1,200:1,200:3,600	--	(12,76,000)	2,55,200	2,55,200	7,65,600
		51,04,000	--	40,83,200	2,55,200	7,65,600
Distribution of IT Department	79,800: 34,200	--	--	(40,83,200)	28,58,240	12,24,960
Total variable overhead costs apportioned (B)		51,04,000	--	--	31,13,440	19,90,560
Total overhead costs (A + B)		1,04,31,300	--	--	60,35,816	43,95,484

(iii) Reciprocal method (using simultaneous equation) of apportioning the costs of support departments over the operating departments

Let F stand for Finance department expenses and T for IT department expenses.

Then, **for fixed overhead costs**-

F = ₹ 22,96,800 + 0.05T

T = ₹ 30,30,500 + 0.10F

Substituting the value of F,

T = ₹ 30,30,500 + 0.10 (22,96,800 + 0.05T)

= ₹ 30,30,500 + 2,29,680 + 0.005T

$= ₹ 32,60,180 + 0.005T$

$T - 0.005T = ₹ 32,60,180$

$$T = \frac{₹ 32,60,180}{0.995}$$

$= ₹ 32,76,563$

Therefore,

$F = ₹ 22,96,800 + 0.05T$

$= ₹ 22,96,800 + (0.05 \times 32,76,563)$

$= ₹ 24,60,628$

Now, **for Variable overhead costs**-

$F = ₹ 12,76,000 + 0.05T$

$T = ₹ 38,28,000 + 0.20F$

Substituting the value of F,

$T = ₹ 38,28,000 + 0.20 (12,76,000 + 0.05T)$

$= ₹ 38,28,000 + 2,55,200 + 0.01T$

$= ₹ 40,83,200 + 0.01T$

$T - 0.01T = ₹ 40,83,200$

$$T = \frac{₹ 40,83,200}{0.99}$$

$= ₹ 41,24,444$

Therefore,

$F = ₹ 12,76,000 + 0.05T$

$= ₹ 12,76,000 + (0.05 \times 41,24,444)$

$= ₹ 14,82,222$

Items of cost	Basis of apportionment	Total (₹)	Operating Departments	
			MD (₹)	DS (₹)
Fixed overhead costs:				
Distribution of Finance Department (₹ 24,60,628)	60%, 30%	22,14,565	14,76,377	7,38,188

Distribution of IT Department (₹ 32,76,563)	45%, 50%	31,12,735	14,74,453	16,38,282
Total fixed overhead costs apportioned (A)		**53,27,300**	**29,50,830**	**23,76,470**
Variable overhead costs:				
Distribution of Finance Department (₹ 14,82,222)	20%, 60%	11,85,778	2,96,445	8,89,333
Distribution of IT Department (₹ 41,24,444)	66.5%, 28.5%	39,18,222	27,42,755	11,75,467
Total variable overhead costs apportioned (B)		**51,04,000**	**30,39,200**	**20,64,800**
Total overhead costs (A + B)		**1,04,31,300**	**59,90,030**	**44,41,270**

(b) Economic Batch Quantity (EBQ):

$$EBQ = \sqrt{\frac{2DS}{C}}$$

Where, D = Annual demand for the product = 2,00,000 liters

S = Setting up cost per batch = ₹ 600 per set-up

C = Carrying cost per unit of production

$$= \frac{₹\ 600}{500 \text{ liters}} = 1.20 \text{ per liter per annum}$$

$$\text{Therefore, EBQ} = \sqrt{\frac{2x2,00,000x600}{1.20}}$$

= 14,142 Liters

3. (a) Working Notes:

(1) Computation of Annual consumption & Annual Demand for raw material 'D'

Sales forecast of the product 'X'	10,000 units
Less: Opening stock of 'X'	900 units

Fresh units of 'X' to be produced	9,100 units
Raw material required to produce 9,100 units of 'X' (9,100 units × 2 kg.)	18,200 kg.
Less: Opening Stock of 'D'	1,000 kg.
Annual demand for raw material 'D'	17,200 kg.

(2) Computation of Economic Order Quantity (EOQ)

$$EOQ = \sqrt{\frac{2 \times \text{Annual demand of 'Dee'} \times \text{Ordering cost}}{\text{Carrying cost per unit per annum}}}$$

$$= \sqrt{\frac{2 \times 17{,}200 \text{ kg.} \times ₹\ 720}{₹\ 125 \times 13.76\%}} \quad = \sqrt{\frac{2 \times 17{,}200 \text{ kg.} \times ₹\ 720}{₹\ 17.2}} = 1{,}200 \text{ kg.}$$

(3) Re- Order level

= (Maximum consumption per day × Maximum lead time)

$$= \left\{\left(\frac{\text{Annual Consumption of 'Dee'}}{364 \text{ days}} + 20 \text{ kg.}\right) \times 8 \text{ days}\right\}$$

$$= \left\{\left(\frac{18{,}200 \text{ kg.}}{364 \text{ days}} + 20 \text{ kg.}\right) \times 8 \text{ days}\right\} = 560 \text{ kg.}$$

(4) Minimum consumption per day of raw material 'D'

Average Consumption per day = 50 Kg.

Hence, Maximum Consumption per day = 50 kg. + 20 kg. = 70 kg.

So, Minimum consumption per day will be

$$\text{Average Consumption} = \frac{\text{Min. consumption} + \text{Max. consumption}}{2}$$

$$\text{Or, } 50 \text{ kg.} = \frac{\text{Min. consumption} + 70 \text{ kg.}}{2}$$

Or, Min. consumption = 100 kg – 70 kg. = 30 kg.

(i) Re-order Quantity

EOQ – 200 kg. = 1,200 kg. – 200 kg. = 1,000 kg.

(ii) Maximum Stock level

= Re-order level + Re-order Quantity – (Min. consumption per day × Min. lead time)

= 560 kg. + 1,000 kg. – (30 kg. × 4 days) = 1,560 kg. – 120 kg. = 1,440 kg.

(iii) Minimum Stock level

= Re-order level – (Average consumption per day × Average lead time)

= 560 kg. – (50 kg. × 6 days) = 260 kg.

(iv) Impact on the profitability of the company by not ordering the EOQ

		When purchasing the ROQ	When purchasing the EOQ
I	Order quantity	1,000 kg.	1,200 kg.
II	No. of orders a year	$\frac{17,200\text{kg.}}{1,000\text{kg.}} = 17.2$ or 18 orders	$\frac{17,200\text{kg.}}{1,200\text{kg.}} = 14.33$ or 15 orders
III	Ordering Cost	18 orders × ₹ 720 = ₹ 12,960	15 orders × ₹ 720 = ₹ 10,800
IV	Average Inventory	$\frac{1,000\text{kg.}}{2} = 500\text{kg.}$	$\frac{1,200\text{kg.}}{2} = 600\text{kg.}$
V	Carrying Cost	500 kg. × ₹ 17.2 = ₹ 8,600	600 kg. × ₹ 17.2 = ₹ 10,320
VI	Total Cost	₹ 21,560	₹ 21,120

Extra Cost incurred due to not ordering EOQ = ₹ 21,560 - ₹ 21,120 = ₹ 440

(b) (i) Flexible Budget before marketing efforts

	Product A (₹) 6,000 units		Product B (₹) 9,000 units	
	Per unit	Total	Per unit	Total
Sales	120.00	7,20,000	78.00	7,02,000
Raw material cost	60.00	3,60,000	42.00	3,78,000
Direct labour cost per unit	30.00	1,80,000	18.00	1,62,000
Variable overhead per unit	12.00	72,000	6.00	54,000
Fixed overhead per unit	8.00	48,000	4.00	36,000

Total cost	110.00	6,60,000	70.00	6,30,000
Profit	10.00	60,000	8.00	72,000

(ii) Flexible Budget after marketing efforts

	Product A (₹) 7,500 units		Product B (₹) 9,500 units	
	Per unit	Total	Per unit	Total
Sales	120.00	9,00,000	78.00	7,41,000
Raw material cost	60.00	4,50,000	42.00	3,99,000
Direct labour cost per unit	30.00	2,25,000	18.00	1,71,000
Variable overhead per unit	13.20	99,000	6.60	62,700
Fixed overhead per unit	6.72	50,400	3.98	37,800
Total cost	109.92	8,24,400	70.58	6,70,500
Profit	10.08	75,600	7.42	70,500

4. (a) (i) Statement of Joint Cost allocation of Ae, Bee and Cee using net realisable value method

Particulars	Product			
	Ae (₹)	Bee (₹)	Cee (₹)	Total (₹)
Sales Value of total production (Working Note 1)	49,41,000 (1,098 tons x ₹ 4,500)	59,43,375 (1,761 tons x ₹ 3,375)	51,36,750 (2,283 tons x ₹ 2,250)	1,60,21,125
Less: Additional cost	---------	---------	27,90,000	27,90,000
Net realisable value (at split-off point)	49,41,000	59,43,375	23,46,750	1,32,31,125
Joint cost allocated (Working Note 2)	21,00,587	25,26,730	9,97,683	56,25,000

Calculation of Cost of ending inventory and Cost of goods sold:

	Product			
	Ae (₹)	Bee (₹)	Cee (₹)	Total (₹)
Allocated joint cost	21,00,587	25,26,730	9,97,683	56,25,000
Additional costs	-------	--------	27,90,000	27,90,000

Cost of goods available for sale (CGAS)	21,00,587	25,26,730	37,87,683	84,15,000
Less: **Cost of ending inventory** (Working Note 3)	**(10,33,069)**	**(2,58,232)**	**(1,24,615)**	**(14,15,915)**
Cost of goods sold	**10,67,518**	**22,68,498**	**36,63,068**	**69,99,085**

(ii) Income statement showing gross margin percentage

	Product			
	Ae (₹)	**Bee (₹)**	**Cee (₹)**	**Total (₹)**
Sales Value of goods sold (A)	25,11,000 (558 tons x ₹ 4,500)	53,35,875 (1,581 tons x ₹ 3,375)	49,68,000 (2,208 tons x ₹ 2,250)	1,28,14,875
Less: Cost of goods sold	10,67,518	22,68,498	36,63,068	69,99,085
Gross margin (₹) (B)	14,43,482	30,67,377	13,04,932	58,15,790
Gross margin (%) (B/A) x 100	**57.49%**	**57.49%**	**26.27%**	

Working notes:

1. Total production of three products for the year

Product (1)	**Quantity sold (tons)** (2)	**Ending inventory (tons)** (3)	**Total production** (4) = (2) + (3)	**Ending inventory %** (5) = (3)/(4)
Ae	558	540	1,098	49.18
Bee	1,581	180	1,761	10.22
Cee	2,208	75	2,283	3.29

2. Joint cost apportioned to each product:

$$\left(\frac{\text{Total joint cost}}{\text{Total net realisable value}} \times \text{Net realisable value of each product}\right)$$

$$\text{Ae} = \left(\frac{₹\ 56,25,000}{₹\ 1,32,31,125} \times ₹\ 49,41,000\right)$$

$$= ₹\ 21,00,587$$

$$\text{Bee} = \left(\frac{₹\ 56,25,000}{₹\ 1,32,31,125} \times ₹\ 59,43,375\right)$$

$$= ₹\ 25,26,730$$

$$\text{Cee} = \left(\frac{₹\ 56,25,000}{₹\ 1,32,31,125} \times ₹\ 23,46,750\right)$$

$$= ₹\ 9,97,683$$

3. Cost of ending inventory

Product (1)	CGAS (₹) (2)	Ending inventory % (3)	Cost of ending inventory (₹) (4) = (2) x (3)
Ae	21,00,587	49.18	10,33,069
Bee	25,26,730	10.22	2,58,232
Cee	37,87,683	3.29	1,24,615

(b) (i) Statement of Profit as per financial records

(for the year ended March 31, 2025)

	(₹)		(₹)
To Opening stock:		By Sales	20,80,000
Finished Goods	76,525	By Closing stock:	
Work-in-process	33,000	Finished Goods	43,250
To Raw materials consumed	7,84,000	Work-in-Process	48,200
To Direct labour	4,65,000	By Rent received	72,000
To Factory overheads	2,65,000	By Interest received	18,500
To Goodwill written off	95,000		
To Administration overheads	3,15,000		
To Selling & distribution overheads	65,000		
To Interest paid	72,000		
To Bad debts	21,000		
To Profit	70,425		
	22,61,950		22,61,950

Statement of Profit as per costing records

(for the year ended March 31,2025)

		(₹)	(₹)
Sales revenue (14,500 units)	(A)		20,80,000
Cost of Sales:			
Opening stock (875 units x ₹ 105)		91,875	
Add: Cost of production of 14,000 units (Refer to Working Note 1& 2)		18,15,360	
Less: Closing stock $\left(\frac{₹18,15,360 \times 375 \text{ units}}{14,000 \text{ units}}\right)$		(48,626)	
Production cost of goods sold (14,500 units)		18,58,609	
Selling & distribution overheads (14,500 units x ₹ 5)		72,500	
Cost of sales: (B)		19,31,109	19,31,109
Profit: {(A) – (B)}			1,48,891

(ii) Statement of Reconciliation

(Reconciling the profit as per costing records with the profit as per financial records)

	(₹)	(₹)
Profit as per Cost Accounts		1,48,891
Add: Factory overheads over absorbed (₹ 2,79,000 – ₹ 2,65,000)	14,000	
S & D overheads over absorbed (₹ 72,500 – ₹ 65,000)	7,500	
Opening stock overvalued (₹ 91,875 – ₹ 76,525)	15,350	
Interest received	18,500	
Rent received	72,000	1,27,350
		2,76,241
Less: Administration overheads under recovery (₹ 3,15,000 – ₹ 3,02,560)	12,440	
Closing stock overvalued (₹ 48,626 – ₹ 43,250)	5,376	
Goodwill written off	95,000	

Interest paid	72,000	
Bad debts	21,000	2,05,816
Profit as per financial accounts		70,425

Working Notes:

1.	**Number of units produced**	Units
	Sales	14,500
	Add: Closing stock	375
	Total	14,875
	Less: Opening stock	875
	Number of units produced	14,000

2. Cost Sheet

	(₹)	(₹)
Raw materials consumed		7,84,000
Direct labour		4,65,000
Prime cost		12,49,000
Factory overheads (60% of direct wages)		2,79,000
Work cost		15,28,000
Add: Opening work-in-process		33,000
Less: Closing work-in-process		(48,200)
Factory cost of goods produced		15,12,800
Administration overheads (20% of factory cost)		3,02,560
Cost of production of 14,000 units		18,15,360

Cost of production per unit: $= \frac{\text{Total Cost of Production}}{\text{No. of units produced}} = \frac{₹\ 18,15,360}{14,000 \text{ units}} = ₹129.67$

5. (a) (i) Statement showing the expenses of operating a single bus and the fleet of 25 buses for a year

Particulars	Per bus per annum (₹)	Fleet of 25 buses per annum (₹)
Running costs : (A)		
Diesel (Refer to working note 1)	2,37,952	59,48,800

Repairs & maintenance costs: (B)	20,500	5,12,500
Fixed charges:		
Driver's salary (₹ 12,000 × 12 months)	1,44,000	36,00,000
Cleaners salary (₹ 8,000 × 12 months)	96,000	24,00,000
Licence fee, taxes etc.	8,400	2,10,000
Insurance	15,600	3,90,000
Depreciation $\left(\frac{₹\ 20,00,000 - ₹1,60,000}{16 \text{ years}}\right)$	1,15,000	28,75,000
Total fixed charges: (C)	3,79,000	94,75,000
Total expenses: (A+B+C)	6,37,452	1,59,36,300

(ii) Average cost per student per month in respect of students coming from a distance of:

(a) 2 km. from the school {₹ 6,37,452 / (236 students × 12 months)} (Refer to Working Note 2)	₹ 225.09
(b) 4 km. from the school (₹ 225.09 × 2)	₹ 450.18
(c) 8 km. from the school (₹ 225.09 × 4)	₹ 900.36

(iii) Calculation of minimum bus fare to be recovered from the students during the year 2025:

Statement showing the expenses of operating a single bus in year 2025

Particulars	Per bus per annum (₹)
Running costs : (A)	
Diesel (Refer to working note 3)	1,90,362
Repairs & maintenance costs: (B) (₹ 20,500 x 0.90)	18,450
Fixed charges:	
Driver's salary {₹ 12,000 × 10 months + (75% of ₹ 12,000 × 2 months)}	1,38,000

Cleaners' salary {₹ 8,000 × 10 months + (75% of ₹ 8,000 × 2 months)}	92,000
Licence fee, taxes etc.	8,400
Insurance	15,600
Depreciation $\left(\frac{₹\ 20,00,000 - ₹1,60,000}{16\ \text{years}}\right)$	1,15,000
Total fixed charges: (C)	3,69,000
Total expenses: (A+B+C)	5,77,812

Minimum bus fare to be recovered:

(a)	2 km. from the school {₹ 5,77,812 / (236 students × 12 months)} (Refer to Working Note 2)	₹ 204.03
(b)	4 km. from the school (₹ 204.03 × 2)	₹ 408.06
(c)	8 km. from the school (₹ 204.03 × 4)	₹ 816.12

Working Notes:

1. Calculation of diesel cost per bus

Distance travelled per year (8 km x 2 trips x 4 shifts x 22 days x 10 months)	14,080 km.
No. of litres of diesel required per bus per year (14,080 km. ÷ 5 km.)	2,816 litres
Cost of diesel per bus per year (2,816 litres × ₹ 84.50)	₹ 2,37,952

2. Calculation of equivalent number of students per bus

Bus capacity of 2 trips (40 students × 2 trips)	80 students
$^1/_4{}^{th}$ fare students (15% × 80 students)	12 students
½ fare students (30% × 80 students × 2) (equivalent to $^1/_4{}^{th}$ fare students)	48 students
Full fare students (55% × 80 students × 4) (equivalent to $^1/_4{}^{th}$ fare students)	176 students
Total students equivalent to $^1/_4{}^{th}$ fare students	236 students

3. Calculation of diesel cost per bus in Year 2025:

Distance travelled during a month (64 km. × 22 days)	1,408 km.
Distance travelled during the year 2025 (1,408 × 8 months)	11,264 km.

No. of litres of diesel required per bus per year (11,264 km. ÷ 5 km.)	2252.8 litres
Cost of diesel per bus per year (2252.8 litres × ₹ 84.50)	₹ 1,90,362

(b)

Sl. No	Description	Recommend ABC (Yes/ No)	Reasons
(i)	K produces one product. Overhead is mainly depreciation.	No	▪ One product situation. For allocation of overhead, ABC is not required. ▪ ABC for cost reduction not beneficial since most of the overhead is depreciation.
(ii)	L produces 5 different products with different facilities.	Yes	▪ Multi product situation. ABC is required for allocation of overhead. ▪ ABC is necessary for pricing. ▪ Cost drivers are likely to be different. ▪ Cost reduction may be possible. ▪ Production facilities are different.
(iii)	Professional services - lawyers/accountants/ computer engineers.	Yes	▪ Variety of services. Hence ABC is required for cost allocation. ▪ Services are very different. ▪ ABC is necessary for pricing. ▪ Cost reduction possible.
(iv)	S produces 2 different labour intensive products. High unit contribution and efficient operations.	No	▪ Different products, but labour intensive. Hence, overhead allocation based on readily traceable direct labour cost will be accurate. Hence, ABC not required for cost allocation.

			▪ Low BEP level implies low level of fixed cost as a % of sale price or as a % of total cost. ▪ Many fixed cost activity drivers are likely to align with the direct labour costs. Hence not required for cost allocation. ▪ Efficient operation. Hence ABC not required even for cost reduction or ABC management.

6. (a) The following table summarises the various methods of costing applied in different industries:

Nature of Output	Method	Cost	Examples of Industries
A Series of Processes	Process costing or Operation Costing	For each process	Sugar
Similar units of a Single Product, produced by Single Process	Unit or output or Single Costing	For the entire activity, but averaged for the output	Cold Drinks
Customer Specifications: single Unit	Job Costing	For each order/ assignment/job	Advertising
Consisting of multiple varieties of activities and processes	Multiple Costing	Combination of any method	Car Assembly

(b) In this situation, It would be recommended to adopt a flexible budgeting system instead of relying solely on a fixed budget.

A flexible budget is a budget which, by recognising the difference in behaviour between fixed and variable costs in relation to fluctuations in output, turnover, or other variable factors, is designed to change appropriately with such fluctuations. According to CIMA, "**a flexible budget is defined as a budget which, by recognizing the difference between fixed, semi-variable and variable costs**

is designed to change in relation to the level of activity attained." Unlike static (fixed) budgets, the flexible budgets show the expected results of a responsibility center for different activity levels.

It will offer following advantages:

1. With the help of flexible budget, the sales, costs and profit may be calculated easily by the business at various levels of production capacity.
2. In flexible budget, adjustment is very simple according to change in business conditions.
3. It also helps in determination of production level as it shows budgeted costs with classification at various levels of activity along with sales. Hence the management can easily select the level of production which shows the profit predetermined by the owners of the business.
4. It also shows the quantity of product to be produced to earn determined profit.

(c) **Spoiled work** is the quantity of production that has been totally rejected and cannot be rectified.

Defective work refers to production that is not as perfect as the saleable product but is capable of being rectified and brought to the required degree of perfection provided some additional expenditure is incurred.

Circumstances	Treatment
(1) Where a percentage of defective work is allowed in a particular batch as it cannot be avoided.	If the actual number of defectives is within the normal limit or is near thereto the cost of rectification will be charged to the whole job and spread over the entire output of the batch. If, on the other hand, the number of defective units substantially exceeds the normal, the cost of rectification of the number which exceeds the normal will be written off as a loss in the Costing Profit and Loss Account.
(2) Where defect is due to bad workmanship.	In this case cost of rectification will be abnormal cost, *i.e.,* not a legitimate element of the cost. Therefore, the cost of rectification shall be written off as a loss, unless by an arrangement, it is to be recovered as a penalty from the workman concerned.

(3) Where defect is due to the Inspection Department wrongly accepting incoming material of poor quality.	In this case the cost of rectification will be charged to the department and will not be considered as cost of manufacture of the batch. Being an abnormal cost, it will be written off to the Costing Profit and Loss Account.

OR

(c) Two types of costs which are associated with employee turnover are:

(a) Preventive Costs: The cost incurred to prevent employee turnover or keep it as lowest as possible. Cost incurred for prevention of employee turnover includes the following:

(i) Cost of medical benefit provided to the employees;

(ii) Cost incurred on employees' welfare like pension etc.

(iii) Cost on other benefits with an objective to retain employees.

(b) Replacement Costs: These are the costs which arise due to employee turnover. If employees leave soon after they acquire the necessary training and experience of good work, additional costs will have to be incurred on new workers, *i.e.,* cost of recruitment, training and induction, abnormal breakage and scrap and extra wages and overheads due to the inefficiency of new workers.